

CLAIMS

What is claimed is:

1. An optical switch comprising:

optical-path switching elements for switching one optical path to another optical path in order to allow one light beam for optical communication emitted from one input optical fiber used for inputting beams out of one or a plurality of input optical fibers, to be incident on one output optical fiber from which beams are outputted out of one or a plurality of output optical fibers;

a photo-sensor;

light guiding means for guiding the beam to be incident on the output optical fiber to the photo-sensor; and

control means for controlling the angle of the optical-path switching element on the basis of detection signal obtained through the photo-sensor.

2. The optical switch according to Claim 1, wherein the optical-path switching element includes a galvanometer mirror.

3. The optical switch according to Claim 1, wherein the light guiding means is constructed so as to guide a light beam transmitted through at least one optical-path

switching element to the photo-sensor.

4. The optical switch according to Claim 3, wherein the light guiding means is constructed so as to split a light beam transmitted through at least one optical-path switching element using a beam splitter and then guide the split beam to the photo-sensor.

5. The optical switch according to Claim 3, wherein the light guiding means includes the photo-sensor comprising a base having a hole through which a light beam passes, the beam being transmitted through at least one optical-path switching element, and at least two or more light receiving elements disposed around the hole on the base.

6. The optical switch according to Claim 1, wherein the light guiding means is constructed so as to partially split a light beam transmitted through the output optical fiber and allow the photo-sensor to receive the split beam.

7. The optical switch according to Claim 6, wherein the light guiding means comprises: an output optical fiber for capturing a light beam transmitted through at least one optical-path switching element; a photocoupler which is disposed on an output terminal of the output

optical fiber and which splits the beam into a beam for the photo-sensor and a beam for communication; and a sensor fiber for guiding the split beam for a fiber used for the photo-sensor to the photo-sensor, and

each optical-path switching element is constructed so as to be oscillated small when a driving signal with a predetermined frequency is supplied thereto.

8. The optical switch according to Claim 7, wherein each optical-path switching element is constructed so as to be oscillated small in two directions.

9. The optical switch according to Claim 8, wherein driving signals to be supplied to each optical-path switching element have different frequencies so that the element is oscillated small in the two directions.

10. An optical switch comprising:

optical-path switching elements for switching at least one optical path to another optical path in order to allow one light beam for optical communication emitted from one input optical fiber used for inputting beams out of one or a plurality of input optical fibers, to be incident on one output optical fiber from which beams are outputted out of one or a plurality of output optical fibers;

a photo-sensor;

light guiding means for guiding the beam to be incident on the output optical fiber to the photo-sensor; and

control means for adjusting the angle of the optical-path switching element on the basis of detection signal obtained through the photo-sensor to adjust at least one of the relative position and the angle of the beam.